

18
1.300 WEST PLAINS-
Eaton Corporation Controls
Division West Plains Plant

JOHN ASHCROFT
Governor

G. TRACY MEHAN, III
Director



STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Division of Energy
Division of Environmental Quality
Division of Geology and Land Survey
Division of Management Services
Division of Parks, Recreation,
and Historic Preservation

MEMORANDUM

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WASTE MANAGEMENT
PROGRAM

DATE: March 31, 1989
TO: Sandra Carroll, Waste Management Program
FROM: Rick Roberts, Poplar Bluff Regional Office
SUBJECT: RCRA Compliance Inspection Report

Attached is a Report on Inspection of the Eaton Corporation Controls Division, West Plains Plant and the completed check lists and CMEL. If you have any questions call me at 785-0832.

RLR/sw



R00056960
RCRA Records Center



JOHN ASHCROFT
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Director

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

Poplar Bluff Regional Office
P.O. Box 1420
948 Lester Street
Poplar Bluff, MO 63901
314-785-0832

Division of Energy
Division of Environmental Quality
Division of Geology and Land Survey
Division of Management Services
Division of Parks, Recreation,
and Historic Preservation

March 31, 1989

LOW PB89-002

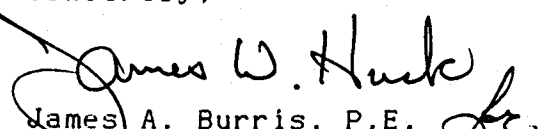
Mr. J.L. Counts, Materials Supervisor
Eaton Corporation, Controls Division
West Plains Plant
P.O. Box 170
West Plains, MO 65775

Dear Mr. Counts:

Enclosed is a report on inspection of the Eaton Corporation Controls Division, West Plains Plant, which was conducted on December 20, 1988. The inspection was made to determine the facility's compliance with the environmental laws of the State of Missouri and the federal U.S. Environmental Protection Agency applicable to the management of hazardous waste. The report is believed to be self-explanatory, however, if you have any questions, please call Rick L. Roberts at 314-785-0832.

The Department of Natural Resources strongly urges you to take necessary actions to comply with the recommendations contained in the report. These actions are recommended to return your facility to compliance with applicable state and federal laws and rules regulating management of hazardous waste. Staff of the Department of Natural Resources, Poplar Bluff Regional Office, will be conducting follow-up inspections to determine if your facility has come into compliance.

Sincerely,


James A. Burris, P.E.
Regional Administrator

JAB/RLR/lo

cc: Mr. Dave L. Crews, Manager-Administration
Ms. Sandy Carroll, Waste Management Program ✓

REPORT ON INSPECTION
OF
EATON CORPORATION
CONTROLS DIVISION
WEST PLAINS PLANT
210 ALLEN STREET
P.O. BOX 170
WEST PLAINS, MISSOURI 65775
EPA I.D. #MOD055872204
MISSOURI I.D. #03119

INTRODUCTION

On December 20, 1988, Rick L. Roberts and Albert R. Wampler, representatives of the Department of Natural Resources, conducted an inspection of the hazardous waste management practices and procedures of the Eaton Corporation, Controls Division, West Plains Plant, located in West Plains, Missouri. The purpose of the inspection was to determine the facility's compliance with the Missouri Hazardous Waste Management Law and Rules, and the federal Resource Conservation and Recovery Act (RCRA) subsequent amendments to RCRA and the federal regulations promulgated thereunder and adopted by the Department.

The Eaton Corporation facility at West Plains, Missouri, is regulated as a federal small quantity generator (generating between 100 to 1000 kilograms in a month). Waste quantities generated as determined during this inspection total 630 kilograms in a given month or less. The West Plains Plant is a manufacturer of gas appliance control valves for the gas cooking range industry. The manufacturing process involves machining of metal parts which are subsequently cleaned through metal degreasing equipment. Waste generated from metal degreasing consists of waste trichloroethylene, (F 001), waste trichlorofluoromethane (F 001), and waste petroleum naptha (D 001). The facility also generates approximately 30 gallons of waste oil per month. The two F001 wastes are disposed under manifests by Van Waters and Rogers, Berkley, MO. The waste trichloroethylene is generated at approximately 100 gallons (549 kg) per month. The waste trichlorofluoromethane is generated at approximately 4.5 gallons (25 kg) per month. The waste petroleum naptha (D 001) is generated through the use of a Safety Kleen Corporation parts cleaning unit and the waste is managed through Safety Kleen Corporation. This waste is generated at 15 gallons (56 kg) per month. American Waste Reclamation of Houston, Missouri, collects and manages the facility's waste oil, which averages approximately 30 gallons per month.

UNSATISFACTORY FEATURES

1. There was no device in the hazardous waste operation area capable of summoning emergency assistance as required by 10 CSR 25-5.262(2) referenced to 40 CFR 262.34(d)(4) referenced to 265.34.
2. The generator does not provide notification to the treatment facility with each off-site shipment of waste that the waste is restricted and requires treatment prior to land disposal as required by 40 CFR 268.7(a)(1).
3. The generator notification on file does not include the Safety Kleen waste petroleum naptha and the amount and frequency of generation.
4. The generator notification on file does not include the waste oil (hydraulic, etc.) generated at the plant and the amount and frequency of generation.

COMMENTS

The inspectors, Rick L. Roberts and Albert R. Wampler, entered the Eaton Corporation, Controls Division, West Plains Plant, presented identification and stated the purpose of their visit. They were directed to Mr. J.L. Counts, Material Supervisor and joined by Mr. David L. Crews, Manager-Administration, both representing Eaton Corporation. The inspection began with a review of the wastes generated. It was discovered that four wastes were being generated and shipped off-site for final disposition. Information on file with the Department did not include registration of the waste petroleum naptha and the waste oil generated by the facility.

A review of the company paper work and manifest records proceeded. The facility personnel training records and job descriptions were determined to be in compliance. The contingency plan was in order and had recently been updated. The manifest records indicated that off-site waste shipments of the F001 wastes were occurring approximately every six months. The quantity being accumulated prior to shipment did not exceed 6,000 kilograms (approximately 1,093 gallons or 20 drums). Since these wastes are transported greater than 200 miles for disposition, they may be accumulated on-site up to 270 days without a permit provided the quantity does not exceed 6000 kg and large quantity generator storage standards are met.

It was noted in reviewing the manifest records that the generator had

not provided proper written notification to the waste treatment facility that the F001 wastes were subject to the land disposal restriction as required by 40 CFR 268.7(1)(1).

The two year exemption for small quantity generators ended November 8, 1988 and the facility had made one shipment since that date without proper written notification accompanying the manifest to the treatment facility.

Next the inspectors proceeded on a facility tour with company personnel to the waste management and storage areas. Containers in the storage area had proper markings and labeling and were kept closed. The storage area provided proper waste containment as required by 10 CSR 5.262(2)(C)2.B.(III). It was noted that no device was located in the hazardous waste operation area capable of summoning emergency assistance. This was brought to the attention of Mr. Counts and Mr. Crews. Following the waste management area tour, we returned to Mr. Counts office and concluded the inspection by reviewing the deficiencies noted during the inspection.

RECOMMENDATIONS

1. We recommend that an emergency alarm system be installed in the hazardous waste operation area capable of summoning emergency assistance. Installation to be completed within 15 days of receipt of this report.
2. We recommend the generator immediately notify their waste treatment facility that their F001 wastes are subject to land disposal restriction and a written notice be sent with each future shipment containing the information in 40 CFR 268.7(a)(1)(i)-(iv). Send a copy of the notice to the Poplar Bluff Regional Office by April 28, 1989.
3. We recommend the facility complete an updated notification form EPA 8700-12/MDNR HWG-1 listing the waste petroleum naptha (D001) and the waste oil along with their amounts and frequency by April 28, 1989.

SUBMITTED BY:

Rick L. Roberts

Rick L. Roberts, P.E.
Environmental Engineer III

APPROVED BY:

James W. Burris
James A. Burris, P.E.
Regional Administrator

RLR/JAB/sw

FY 1989 HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG (CMEL)

STATE LOG

Today's Date: MARCH 30, 1989Initials of Preparer: R.L.B.

(4) Data Entry:

☒ New
☐ Update

Facility Type

☐ GWM ☐ GEN
☐ TSD ☐ TRANS
☒ SQG (100-1000 kg/mo)(1) EPA ID: M12D055872204(2) HANDLER NAME: EATON CORPORATION, CONTROLS DIVISION, West Plains Plant(3) ADDRESS: [City] P.O. Box 170 West PLAINS [State] MO(5) DATE OF INITIAL EVALUATION WHICH IS THE BASIS FOR THIS LOG: 12/20/88 (5a) AGENCY RESPONSIBLE FOR EVALUATION: 5 Put one code in box S = State B = Contractor/State O = Other(6) TYPE OF EVALUATION COVERED BY THIS REPORT:
Select Evaluation 1 Type & insert in box:
1 = CMPL Eval. Insp. (CEI) 2 = Sampling Inspection 3 = Record Review 4 = Compr. GWM Eval. (CME) [COMPLETED]
5 = Compl. Sched. Eval. 10 = Other inspections, including LDR 11 = Case Development Inspection
12 = O&M Inspection [COMPLETED] 13 = CA Inspection 80 = CME/O&M field work STARTED(7) DATE OF EVALUATION COVERED BY THIS REPORT [enter only if different from 5]: __/__/__(7a) Eval. Comments:
(limit of 99 lines)

(8) CLASS and VIOLATIONS

KEY

- (X) Violations [No specialty viols.]
(B) Both Class I Viols. & Specialty Viols.
(S) Same Violation/Specialty Viol.
(O) No Viols. or Specialty Viols. found

SPECIALTIES VIOLATIONS

(C) Corrective Action Schedule Violation

(H) HPV

(I) No Insurance only [Class I only]

Class of Violation	Violations/Releases							
	GWM	C/PC	Fin. Res	Pt. B	Compl. Sch	Manifest	Land Ban	Other
I						0	X	0
II						0	0	X

(8a) Viol. Comment: Failure to have alarm device; UNREGISTERED WASTES.
(80 spaces)

(9) ENFORCEMENT ACTIONS:

Class	Area of Viol/Rel.	Type (use code)	Date Action Taken	Compliance Dates		Penalty		Resp. Ag. (use code)
				Scheduled	Actual	Assessed	Collected	
1	LB	03	3/30/89	4/28/89	1/1	\$	\$	
2	OT	03	3/30/89	4/28/89	1/1	\$	\$	

Codes for Resp. Ag.
E = EPA
S = StateCodes for types of enforcement actions
02 = 3007 Letter
03 = Warning Letter/NOV
05 = Final Admin. Order10 = Informal
11 = Filed Civil Action
12 = Filed Criminal Action14 = Referred to EPA
18 = Civil Referral to AG/DOJ
19 = Final Judicial Order

(10) Enforc. Comment: (80 spaces)

SMALL QUANTITY GENERATOR CHECKLIST

Name of Facility: Eaton Corporation Date: 12/20/88
Controls Division
Address: West Plains Plant Phone 417 256-7171
213 Allen St.
P.O. Box 172, West Plains, MO 65775
Facility Requirements: J.L. Counts / David L. Counts Missouri I.D. # 03119
Title: Plant Mtl. Supervisor Manager EPA I.D. # MWD055872204
Transporter? NO Administration

Provide a brief description of the manufacturing process.

Manufactures gas control valves for gas appliances

List the hazardous wastes generated:

	Waste	Amount/month	Kilogram/month	I.D.#	Disposition
FOU1-1.	<u>Trichloroethylene</u>	<u>100 gals.</u>	<u>549 kg/mth.</u>	<u>FOU1</u>	<u>Van Wazer & McKesson Chem.</u>
FOU1-2.	<u>Trichlorofluoromethane</u>	<u>4.5 gals</u>	<u>2.5 kg/mth</u>	<u>FOU1</u>	<u>Van Wazer & McKesson Chem.</u>
DOU1-3.	<u>Safety-Kleen</u>	<u>15 gals</u>	<u>5.6 kg/mth.</u>	<u>DOU1</u>	<u>Springfield</u>
4.	<u>Waste Oil (Hydraulic)</u>	<u>30 gals.</u>			<u>American Waste Reclamation</u>
5.	<u>Total</u>		<u>63.0 kg/month</u>		

A. MANIFESTS AND RECORDKEEPING 10 CSR 25-5.262(2) AND 5.262(2)(8) AND (D)

Generator's MO and EPA I.D. Numbers. ☒
Manifest document number (MO I.D. & Shipment #). ☒
EPA Waste I.D. codes ☒
Generator's name, address, phone # ☒
All Transporters' names, phone #'s, MO and EPA I.D. #'s. ☒
Designated facility name, address, phone # and MO and EPA I.D. # ☒
Proper DOT Shipping Name, Hazard Class and I.D. # ☒
Containers, Quantity and Unit Wt/Vol being shipped properly designated ☒
Proper certification including waste minimization. ☒
Manifest properly signed and dated ☒
No more than 10 days time between generator and facility signatures. ☒
Manifests returned within 35 days. ☒
If not, exception generator report submitted within 45 days. ☒
Completed manifests and Summary Manifest Report and Certification. ☒
Spills of reportable quantities reported to DNR. ☒
Waste reclaimed under a contractual agreement. ☒
Generator maintains a copy of the contractual agreement on-site. ☒

B. PRETRANSPORT, CONTAINERIZATION AND LABELING 10 CSR 25-5.262(2) AND 5.262(2)(C)1

Waste packaged, marked and labeled per DOT during entire on-site storage period ☒
Date of accumulation marked. ☒
Placards available for use by transporters ☒

C. STORAGE STANDARDS 10 CSR 25-5.262(2) - 40 CFR 262.34(c) AND (d)

Storage does not exceed 180 days (270 days if transported > 200 miles) ☒
Accumulated wastes in storage do not exceed 6,000 kg ☒
* Note: If waste in storage exceeds 1,000 kg then large quantity storage standards apply, except for accumulated time.
Emergency coordinator on premise or on call. ☒
Emergency coordinator's name and phone # posted near phone ☒
Locations of extinguisher and spill control equipment posted near phone ☒
Telephone # of fire department posted near phone ☒
Employees familiar with waste handling and emergency procedures. ☒
Facility maintained and operated to minimize the possibility of an emergency. ☒
Internal communication or alarm system ☒
A device in the hazardous waste operation area capable of summoning emergency assistance ☒
Fire control, spill control, and decontamination equipment available ☒
Adequate water supply for fire control equipment. ☒
Communication and emergency equipment tested and maintained. ☒

- Adequate aisle space ☒
- Arrangements with local authorities. ☒
- Containers in good condition ☒
- Containers kept closed in storage. ☒
- Containers storing incompatible waste/materials are separated or protected from each other. ☒
- Containers of ignitable waste stored >50 ft from facility property line. ☒
- Weekly inspection of container storage area. ☒
- Satellite accumulation requirements met (if applicable). ☒
 - a. Stored in satellite areas less than one year. ☒
 - b. Container marked identifying contents and beginning date. ☒
 - c. Containers closed/compatible/good condition ☒
 - d. Quantities accumulated not exceeding 55 gal. (1 qt. of acutely hz. waste). ☒

D. STORAGE TANKS 10 CSR 25-5.262(1) AND 40 CFR 262.34(d) *NOT APPLICABLE*

- Uncovered tanks have 2 ft. freeboard unless a containment system is in place. ☒
- Continuously fed tanks equipped with a feed cut-off system or a by-pass system. ☒
- Tank and area inspected weekly to detect damage, corrosion, leakage. ☒
- Discharge control equipment and data from monitoring equipment, where present, inspected daily. ☒
- Level of waste in tank inspected daily. ☒
- Tanks in compliance with buffer zone (NFPA) requirements. ☒
- Ignitable or reactive wastes stored safely. ☒
- All hazardous waste (may include residues and contaminated soils) removed at closure. ☒

E. WASTE OIL CSR 25-11.010

- Written waste oil contract maintained on-site ☒
- Waste oil properly stored and transported ☒

HAZARDOUS WASTE STORAGE TANKS *N.A.*

<u>WASTE CONTAINED</u>	<u>VOLUME OF TANK</u>
_____	_____
_____	_____
_____	_____
_____	_____

Please mark boxes as shown

- ☒ In compliance
- ☐ In violation

Inspector's Signature *Rick L. Blevins*
 Title *Environmental Engineer III*
 Office *Poplar Bluff Regional Office*

12/20/89 C. TREATMENT/STORAGE FACILITY

1117: EATON CorporationP.O. Box 170WEST PLAINS, MO 65775Missouri I.D.#: 031191117 Representative: James L. CountsEPA I.D.#: MO 255872204Title: Plant Mtl's SupervisorPhone #: (417) 254-71711117 Status: Large Quantity Generator ☐
Small Quantity Generator ☒
Treatment/Storage Facility ☐
Land Disposal Facility ☐
Permitted ☐

GENERAL

1. Specify the wastes handled by the facility which are subject to the land disposal restrictions:

EPA Waste Code (F001)

Waste Description

a. TRICHLOROETHYLENE F001 from degreasingb. F001 TRICHLOROETHYLENE F001 from degreasing

c. _____

d. _____

Are these wastes properly classified? Yes ☒ No ☐

2. Which, if any, of the following exemptions or extensions apply to this facility?

- Two-year national capacity extension of the effective date for solvent wastes generated by small quantity generators (268.30) ☒
Till - Nov. 8, 1993
- Two-year statutory exemption for solvent wastes generated from RCRA corrective or CERCLA Section 104 and 106 response actions (268.30) ☐
- Two-year national capacity extension of the effective date for solvent-water mixtures, solvent-containing sludges, or solvent-containing soil (non-CERCLA/RCRA corrective action) containing less than 1% total F001-F005 solvent constituent; (268.30) ☐
- Other, specify (268.4, 268.5, 268.6, 268.31, 268.44) ☐

3. Has the facility used dilution of a restricted waste as a substitute for adequate treatment to achieve compliance (268.31)?

yes _____ no ☒

4. List facilities to which off-site shipments of restricted wastes have been sent and/or from which shipments have been received.

a. Van Waters + Rogers

b. _____

GENERATOR REQUIREMENTS

1. Generator has adequately tested his wastes using the TCLP, or applied knowledge, or both. (268.7(a))..... ☒
2. Generator has determined the appropriate treatment standards for his restricted wastes. (268.7 and Support D)..... ☒
3. The generator is not sending restricted waste to a land disposal facility for direct land disposal without treatment..... ☒
4. a. If restricted wastes require treatment prior to land disposal, then the generator has provided notification to the treatment facility with each off-site shipment. (268.7(a))..... ☒
- b. If restricted wastes do not require treatment prior to land disposal, then the generator has provided a notification and certification to the LDF that the wastes meet all applicable treatment standards and prohibitions (268.7(a))..... (N/A)
- Certifications properly worded..... (N/A)
5. If the generator's restricted waste is subject to any exemptions or extensions, then the generator has sent notices with each shipment to the LDF stating the waste is exempt. (268.7(a))..... (N/A)

1. The facility is not sending restricted waste to a land disposal facility for direct land disposal without treatment..... ()
2. The treatment facility has adequately tested its treatment residues using TCLP, or applied knowledge, or both to determine whether or not they meet the applicable treatment standards specified in 268.41 (268.7(b))..... ()
3. The facility has modified its waste analysis plan to include the additional testing requirements of 268.7, referenced in 264.13 and 265.13..... ()
4. a. If the waste treatment residues do not meet applicable treatment standards or prohibitions, and are sent to another treatment facility prior to land disposal, then the facility complied with the generator notification requirement of 268.7(a), (268.7(b))..... ()
- b. If the treatment residue does not require further treatment prior to land disposal, then the facility submitted to the LDF with each shipment of waste residue a certification that the waste is in compliance with applicable treatment standards. (268.7(b))..... ()
- Certifications properly worded..... ()
5. The facility's written operating record has been modified, and now includes the documentation required by 264.73(b)(3)(10)(11)(12) or 265.73(b)(3)(8)(9)(10)..... ()
6. If the facility has stored restricted wastes for greater than one year, then it can satisfactorily demonstrate that the storage has been for the purpose of accumulating an amount necessary to facilitate proper recovery, treatment or disposal (268.50)..... ()
7. If the treatment facility is permitted, it has made the necessary minor modifications to its permit to allow it to treat restricted wastes not previously specified in the permit (270.42(2))..... ()

D. LAND DISPOSAL FACILITY REQUIREMENTS

1. The facility is not land disposing restricted wastes..... ()
2. The land disposal facility has records of notifications and certifications submitted by all applicable generators and storage and treatment facilities for each shipment of waste or waste treatment residue accepted for land disposal. (268.7(c))..... ()
3. The LDF has modified its waste analysis plan in accordance with the additional requirement of 268.7, referenced in 264.13 and 265.13..... ()
4. The LDF has adequately tested the wastes received using TCLP, applied knowledge, or both. (268.7(c))..... ()
5. The facility's written operating record has been modified, and now includes the documentation required by 264.73(b)(3)(10)(13)(14) or 265.73(b)(3)(8)(11)(12)..... ()

COMMENTS: Generator was unaware of the land disposal restriction regulationsPlease mark boxes as shown (☒) In compliance (☐) In violationInspector's Signature Rick T. RobertsTitle Environmental Engineer IIIOffice Indian Bluff Regional Office

TRICHLOROETHYLENE. Syns: *ethinyl trichloride*, *ethylene trichloride*. Stable, colorless, heavy, mobile liquid, chloroform-like odor. $\text{CHCl}_2\text{CCl}_2$, mw: 131.40, mp: -73° , bp: 87.1° , fp: -86.8° , d: 1.45560 @ $25^\circ/4^\circ$, autoign. temp.: 788°F ; vap. press: 100 mm @ 32° , vap. d: 4.53, flash p: none, lel = 12.5%, uel = 90%.

Acute tox data: Oral LD_{50} (human) = 857 mg/kg; 160 ppm for 83 min \rightarrow human CNS effects; 110 ppm for 8 hrs \rightarrow inhal human irr effects; oral LD_{50} (rat) = 4920 mg/kg; inhal LC_{50} (rat) = 8000 ppm for 4 hrs; ip LD_{50} (dog) = 1900 mg/kg; iv LD_{50} (dog) = 150 mg/kg. [3]

THR = HIGH via iv; MOD via ip, inhal, oral routes. An exper (S) carc. [3, 13] Inhal of high conc causes narcosis and anesthesia. A form of addiction has been observed in exposed workers. Prolonged inhal of mod conc causes headache and drowsiness. Fatalities following severe, acute exposure have been attributed to ventricular fibrillation resulting in cardiac failure. There is damage to liver and other organs from chronic exposure. Cases have been reported but are of questionable validity. Determination of the metabolites trichloroacetic acid and trichloroethanol in urine reflects the absorption of trichloroethylene. A food additive permitted in food for human consumption. [109] A common air contaminant.

Fire Hazard: Low, when exposed to heat or flame. High conc of trichloroethylene vapor in high-temp. air can be made to burn mildly if plied with a strong flame. Though such a condition is difficult to produce, flames or arcs should not be used in closed equipment which contains any solvent residue or vapor. Can react violently with Al, Ba, N_2O_4 , Li, Mg, liquid O_2 , O_2 , KOH, KNO_3 , Na, NaOH, Ti. [19]

Spont Heating: No.

Disaster Hazard: Dangerous; see chlorides.

TRICHLOROETHYL SILANE. $\text{C}_2\text{H}_5\text{SiCl}_3$, mw: 163.5.

THR = Reacts violently with water. [19]

TRICHLOROFLUOROGERMANE. Colorless liquid. GeCl_2F , mw: 197.97, mp: -49° , bp: 37.5° .

THR = See fluorides, germanium compounds and chlorides.

1,1,1-TRICHLOROFLUOROETHANE. $\text{C}_2\text{H}_2\text{Cl}_3\text{F}$, mw: 151.4.

THR = No data. See fluorides. Violent reaction with Ba. [19]

TRICHLOROFLUOROMETHANE. See fluorotrichloromethane.

TRICHLOROGERMANE. Syn: *germanium chloroform*. Colorless liquid. GeHCl_3 , mw: 179.98, mp: -71.0° , bp: 75.2° , d: 1.93 @ 0°C .

THR = See hydrochloric acid and germanium compounds.

TRICHLOROISOCYANURIC ACID. White crystals, chlorine odor, mod sol in water. $(\text{CINCO})_3$, mw: 232.5, mp: 225° - 230° (decomp).

Acute tox data: Oral LD_{50} (rat) = 700-800 mg/kg.

THR = MOD-HIGH via oral route. Toxicity symptoms include emaciation, lethargy, weakness and delayed death. Autopsy shows inflammation of GI tract, liver discoloration and kidney hyperemia. A powerful oxidizer.

Disaster Hazard: Dangerous; when heated to decomp, emits chloride and carbon monoxide fumes.

1,1,1-TRICHLOROISOPROPYL ALCOHOL. Syns: *isopral*, *1,1,1-trichloro-2-propanol*. Crystals, camphor-like odor, pungent taste, water-sol. $\text{C}_3\text{H}_2\text{Cl}_3\text{O}$, mw: 163.4, mp: 50° , bp: 162° .

Acute tox data: Oral LD_{50} (rat) = 1000 mg/kg. [3]

THR = MOD via oral route. See also chlorinated hydrocarbons, aliphatic.

Disaster Hazard: Dangerous; see chlorides.

TRICHLOROMELAMINE. Syn: *TCM*. White powder, slightly water-sol. $\text{C}_3\text{H}_3\text{Cl}_3\text{N}_6$, mw: 229.4, autoign. temp.: 320°F .

Acute tox data: Oral LD_{50} (mice) = 490 mg/kg. [3]

THR = HIGH via oral route.

Fire Hazard: Mod, in the pure state, when heated or ignited by spark or flame; reacts vigorously to evolve smoke and heat; reacts with acetone, NH_3 , aniline, diphenylamine, turpentine. [19] Vendor can supply directions for handling.

Disaster Hazard: Dangerous; when heated to decomp, emits highly toxic chloride and NO_x fumes.

TRICHLOROMETHANE. See chloroform.

TRICHLOROMETHANE SULFENYL CHLORIDE. See perchloromethyl mercaptan.

TRICHLOROMETHYL CHLOROFORMATE. See diphosgene.

TRICHLOROMETHYL ETHER. A liquid of pungent odor. $\text{CHCl}_2\text{OCH}_2\text{Cl}$, mw: 149.42, bp: 130° - 132° , d: 1.5066 @ 10° .

THR = HIGH irr to skin, eyes and mu mem and via oral, inhal routes. See also ethers.

Disaster Hazard: Dangerous; when heated to decomp, emits highly toxic fumes; will react with water or steam to produce toxic and corrosive fumes.

TRICHLOROMETHYL PERCHLORATE. Cl_3CClO_4 , mw: 217.8.

THR = Detonates @ 40° .